

# 作物組織培養特論課程大綱

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## Chap. 1. Plant Cell Culture

1. Introduction
2. Techniques of cell culture
3. Growth patterns in susp. cell culture
4. Synchronous culture
5. Characteristics of plant cell lines
6. Applications of plant cell culture

## Chap. 2. Anther Culture

1. Introduction
2. Principles of Anther Culture (Pollen Culture)
3. Factors affecting androgenesis
4. Mode of pollen development
5. Chromosome doubling of haploid
6. Variations among haploid plants
7. Pollen culture

## Chap. 3. Production of Secondary Metabolites (Sm)

1. Characters of Sm
2. Production of Sm with PTC
3. Yield improvement
4. Activity of the products

## Chap. 4. Protoplast and Somatic hybridization

1. Protoplast isolation
2. Protoplast culture
3. Protoplast fusion
4. Selection of somatic hybrid(parasexual hybrid)
5. Analysis of the somatic hybrids
6. Genetic behavior in somatic hybrid plants -- Nuclear genes
7. Extranuclear genetic behavior
8. Uses of somatic hybridization

## Chap. 5. Genetic Engineering

1. Why plant genetic engineering
2. Transformation of plants
3. Identification of transformed plants